a controller contained within the inner volume for applying energization current to the stator windings.

17. A rotary electric motor as recited in claim 16, where said inner volume is substantially cylindrical.

18. A rotary electric motor as recited in claim 16, wherein said motor is a brushless motor and wherein said inner volume further comprises:

a power supply and electronic switches responsive to the controller for directing current excitation from the power supply to the stator windings.

REMARKS

Claims 1 through 18 remain pending in this application. In response to the Office Action, dated December 11, 2002, claims 1, 9 and 16 through 18 have been amended. Attached hereto is a marked-up version of the changes made to the claims by the current amendment. The attached page is captioned "VERSION WITH MARKINGS TO SHOW CHANGES MADE." Care has been taken to avoid the introduction of new matter. Favorable reconsideration of this application as now amended is respectfully solicited.

Objection has been made to the drawings for lacking illustration of "the width of the current pulses and the selection of the switches." The quoted phrase is taken from claim 9 as originally presented. In response, claim 9 has been amended to recite that duration of the current directed to the stator windings and energization of the switches are controlled in response to signals received by the controller. A motor winding 34 and switches 53-56 are illustrated in Fig. 5. As clearly shown, the switches are energized by

drive signals received from the gate driver at their input terminals. When energized, the switches direct current to the stator winding from the source (voltage supply Vs). The duration of the current supplied is thus controlled by the drive signals received from the gate driver. The gate driver receives control signals from the sequence controller 60, depicted in Fig. 4, which is responsive to position signals received from rotor position sensor 62. It is submitted, therefore, that all features of claim 9 are illustrated in the drawings. Withdrawal of the objection is respectfully solicited.

Claims 1 through 18 have been rejected under the second paragraph of 35 U.S.C. §112 for indefiniteness. The Office Action finds it unclear as to "what type of flux" does not traverse the inner stator volume, in reference to claims 1 and 16. Claim 9 also has been cited for lacking antecedent bases. In response to this rejection, claims 1, 9 and 16 have been amended. In addition to the changes to claim 9 noted above, the phrase "the rotor position sensor" has been changed to "a rotor position sensor." It is submitted that these changes obviate the antecedent basis issues raised in the Office Action. With respect to claims 1 and 16, these claims have been amended to require that the stator have an inner radial periphery that defines an inner volume. Claims 17 and 18 have been amended to conform with the "inner volume" phraseology of parent claim 16. The claims are silent as to a lack of flux in the inner volume. It is urged, therefore, that claims 1 through 18 comply with the requirements of the second paragraph of 35 U.S.C. § 112. Withdrawal of the rejection is respectfully solicited.

Claims 16 and 17 have been rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. patent 6,380,648 to Hsu (hereinafter "Hsu '648 "), set forth at paragraph 5 of the Office Action.

Claims 1, 2, 8, 13 and 15 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsu '648 in view of U.S. patent 4,990,809 (hereinafter "Artus"), at paragraph 8 of the Office Action. Claim 3, dependent from claim 2, has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsu '648 in view of Artus and U.S. patent 5,923,106 (hereinafter "Isaak"), at paragraph 9 of the Office Action. Claim 4, dependent from claim 3, has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsu '648 patent in view of Artus, Isaak and U.S. patent 6,348,752 (hereinafter "Erdman"), at paragraph 10 of the Office Action. Claims 5 through 7, dependent from claim 1, have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsu '648 in view of Artus and U.S. patent 5,726,560 (hereinafter "Eakman"), at paragraph 11 of the Office Action. Claims 10 through 12, dependent from claim 4, have been rejected (Office Action, paragraph 12) under 35 U.S.C. § 103(a) as being unpatentable over Hsu '648 in view of Artus, Isaak and U.S. patent 6,278,210 (hereinafter "Fatula"). Claims 14 and 9, dependent from claims 13 and 8 respectively, have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsu '648 in view of Artus and Erdman, at paragraph 13. Claim 18, dependent from claim 16, has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Hsu '648 in view of Isaak, as set forth at paragraph 14 of the Office Action.

Each of the rejections identified above has applied Hsu '648 either in anticipation of claims under 35 U.S.C. § 102 or as the primary reference for finding obviousness under 35 U.S.C. § 103. In response to these rejections, filed herewith are declarations of Dr. Boris A. Maslov, an inventor, and Gene Z. Rubinson, the undersigned, submitted under 37 CFR 1.131. These declarations establish that the invention disclosed and

recited in all claims in the present application was conceived prior to the effective filing date of Hsu '648 and that due diligence was exercised from prior to the effective filing date of Hsu ' 648 to the filing of this application.

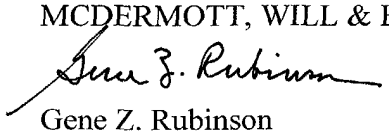
The Hsu '648 patent application was filed June 11, 2001 without benefit of priority. Attached as Exhibit 1 to the declaration of Dr. Maslov is a confidential paper entitled "Integration of an electric motor with controller and power supply (016)," prepared by Dr. Maslov in cooperation with co-inventors Pyntikov and Lu, describing the subject matter of the present invention. The paper bears a date, which has been redacted, that is prior to June 11, 2001. Information in this paper has been used in preparation of the disclosure of the present application. Figs. 2, 2a, 4, 6 and 3 of the paper are virtually identical, respectively, to Figs. 1- 6 of the present application. Each of the claims of the present application corresponds to description in the paper. It is submitted that Exhibit 1 provides ample evidence that the claimed invention was conceived prior to the Hsu '648 filing date, as stated in the Maslov declaration. It is further submitted that the Rubinson declaration establishes due diligence in the preparation and filing of the present application from the Hsu '648 filing date until the October 1, 2001 application filing date. As 37 CFR 1.131 has been satisfied for establishing prior invention of the current application, it is submitted that the Hsu '648 patent does not meet the requirements for prior art under any sub-section of 35 U.S.C. § 102. Withdrawal of all rejections of record is, therefore, appropriate.

Accordingly, it is submitted that the application as presently amended is now in condition for allowance. A Notice of Allowability is respectfully solicited. To the extent necessary, a petition for an extension of time under 37 C.F.R. 1.136 is hereby made.

Please charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account 500417 and please credit any excess fees to such deposit account.

Respectfully submitted,

MCDERMOTT, WILL & EMERY



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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please amend claims 1, 9 and 16 through 18 as follows:

1. (Amended) A rotary electric motor comprising:

a rotor having a plurality of permanent magnets disposed in an annular ring configuration, the magnets alternating in magnetic polarity along an inner annular surface;

a stator of annular ring construction encompassed within the rotor and separated therefrom by a radial air gap, the stator comprising:

a plurality of ferromagnetic core segments ferromagnetically isolated from each other, each of the core segments having respective coils wound thereon to form stator windings;

an outer radial periphery at the air gap; and

an inner radial periphery defining [a] an inner volume [within which substantially no flux traverses]; and

a controller contained within the inner volume for applying energization current to the stator windings.

9. (Amended) A rotary electric motor as recited in claim 8, wherein [the width of the] duration of the current [pulses] directed to the stator windings and [the selection] energization of the switches are controlled [by the controller] in response to signals received by the controller from [the] a rotor position sensor.

16. (Amended) A rotary electric motor comprising:

a rotor having a plurality of permanent magnets disposed in an annular ring configuration, the magnets alternating in magnetic polarity along an inner annular surface;

a stator of annular ring construction encompassed within the rotor and separated therefrom by a radial air gap, the stator comprising a plurality of ferromagnetic core segments having respective coils wound thereon to form stator windings, the stator having an outer radial periphery at the air gap and an inner radial periphery defining [a] an inner volume [within which substantially no flux traverses]; and

a controller contained within the inner volume for applying energization current to the stator windings.

17. (Amended) A rotary electric motor as recited in claim 16, where said inner volume is substantially cylindrical.

18. (Amended) A rotary electric motor as recited in claim 16, wherein said motor is a brushless motor and wherein said inner volume further comprises:

a power supply and electronic switches responsive to the controller for directing current excitation from the power supply to the stator windings.